GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

Infrastructure and Investment Department - Andhra Pradesh Drone Policy 4.0 (2024-29) – Orders – Issued.

INFRASTRUCTURE AND INVESTMENT (AIRPORTS) DEPARTMENT

G.O.Ms.No.18 Dated:19.11.2024
Read:-

From the Managing Director, AP Drones Corporation e-office file Computer No.2609914, dated 05.11.2024

ORDER:

Unmanned Aerial Vehicles (UAVs), Unmanned Ground Vehicles (UGVs), and Unmanned Water Vehicles (UWVs)—collectively referred to as Drones—have evolved significantly from their initial military applications to cover various civilian applications. The Managing Director, AP Drones Corporation vide reference read above has stated that the Indian Drone market is poised for remarkable growth in the future. This expansion is driven by the diverse application of drone technology among multiple sectors including agriculture, health care, logistics, surveillance, infrastructure, disaster management, survey and defence.

2. However, the drone technology and development in the country faces several critical gaps that must be addressed for optimal growth. Lack of sufficient infrastructure for development, testing, takeoff and landing concerns over data privacy and robust management, protocol, shortage of trained personal, etc, are the concerns raised by the industry.

3. In this dynamic environment, the Government of Andhra Pradesh is striving to establish itself as a leader in Drone System Design and Manufacturing (DSDM) and Drone Enabled Technology and Services (DeTS). By leveraging both Government of India initiatives and its own investor-friendly policies, Andhra Pradesh aims to create a conducive ecosystem for stakeholders in the drone industry. This strategic approach not only enhances local capabilities but also attracts innovations and investments, positioning Andhra Pradesh as a potential hub for drone technology in India.

4. The emergence of drone technology presents significant opportunities and challenges for Andhra Pradesh, necessitating a well-defined policy framework tailored to the region's unique needs. As public service deliveries and industries within the state increasingly adopting Drone Technology for applications such as Agriculture, Logistics, and disaster management,

comprehensive guidelines are critical to foster innovation while ensuring safety, privacy, and regulatory compliance. To facilitate the growth of the drone industry, it is essential for the government to take proactive measures that include handholding businesses and entrepreneurs entering this space.

5. In this context, Government of Andhra Pradesh has taken leadership in organizing the National Drone Summit, 2024 in Amaravati, as a pivotal event show causing innovations, advancement and future potential in Drone technology and development. Organised by the State Government with the support of Government of India, the summit brought together innovators industry leaders, policy making, researchers and investors to discuss the latest trends and applications of drones across various sectors.

6. Based on extensive consultations with all stake holders and learning from the practices in other states, the Managing Director, AP Drones Corporation has proposed the Andhra Pradesh Drone Policy 4.0 (2024-29) intended to establish a transformative ecosystem in the state, fostering the development, integration, and responsible deployment of unmanned and autonomous systems. Its objective is to enhance innovation, efficiency, and sustainability across key sectors such as agriculture, industry, public safety, and infrastructure. By doing so, the policy aspires to position Andhra Pradesh as a global leader in unmanned technology, driving robust economic growth and setting new benchmarks for responsible and sustainable deep-tech driven progress.

7. The Government of Andhra Pradesh shall allocate Rs. 500 crores to support the implementation of this drone policy throughout the policy period. This financial commitment aims to foster technological advancement and innovation within the state. The funding will enhance infrastructure, facilitate research and development, and provide training for personnel, thereby promoting the effective use of drones across various public services.

8. It is also proposed to establish Drone City in Orvakal, Kurnool district, which will act as a drone ecosystem hub with common user facilities for Research & Development, Manufacturing and Testing of drone technology. The common facility will be developed and run by a committee of experts drawn from the industry, academia, service providers and user departments.

9. The remarks of the Finance Dept., have been received vide e-office file No.INI01-APFN/37/2024-AIR (Computer No.2610007), that the policy to support drone manufacturing, adoption of technology and development of user application is important keeping in view its potential. Further, Finance Department will be consulted at appropriate state for fiscal provisions.

10. The Government, after examining the proposal, hereby approve and adopt the Andhra Pradesh Drone Policy, 4.0 (2024-29), annexed herewith to this order, which comes into immediate effect. The incentives mentioned in the policy will be extended to all eligible stakeholders as per the operational guidelines to be notified separately.

11. This order issues with the concurrence of Finance Department as mentioned above.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

S.SURESH KUMAR
SECRETARY TO GOVERNMENT

To
The Managing Director, AP Drone Corporation, Vijayawada.
All Departments in AP Secretariat.
All the District Collectors in A.P.
Copy to
The OSD to Additional Secretary to Hon'ble C.M.
The PS to Hon'ble M(I&I)
The GA(Cabinet) Dept.,
The Finance Department.
The PS to Chief Secretary to Government.
The PS to Secretary to Government, I&I Department
Sf/Sc.(C.No.INI01-APFN/37/2024 Computer No.2610007)

// FORWARDED BY ORDER //

SECTION OFFICER

ANNEXURE

(Annexure to G.O.Ms. No.18, Infrastructure and Investment (Airports) Department, Dt:19.11.2024)

Andhra Pradesh Drone Policy 4.0

(2024-29)

Abbreviations

AAM - Advanced Air Mobility

APDC - Andhra Pradesh Drones Corporation

APSSDC - Andhra Pradesh State Skill Development Corporation

BVLOS - Beyond Visual Line of Sight

DeTS - Drone Enabled Technology and Services

DSDM - Drone System Design and Manufacturing

DTC - Drone Traffic Control

eVTOL - Electric Vertical Take-Off and Landing

GoI - Government of India

ITIs - Industrial Training Institutes

MOUs - Memorandums of Understanding

NSDC - National Skill Development Corporation

PLI - Product Linked Incentive

PMKVY - Pradhan Mantri Kaushal Vikas Yojana

POC - Proof of Concept

PPP - Public-Private Partnership

QCI - Quality Council of India

SGST - State Goods and Services Tax

SIPC - State Investment Promotion Committee

SIPB - State Investment Promotion Board

SoP - Standard Operating Procedure

UAM - Urban Air Mobility

UAV - Unmanned Aerial Vehicle

UGV - Unmanned Ground Vehicle

UWV - Unmanned Water Vehicle

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1. Preamble

Unmanned Aerial Vehicles (UAVs), Unmanned Ground Vehicles (UGVs), and Unmanned Water Vehicles (UWVs)—collectively referred to as Drones—have evolved significantly from their initial military applications. The rapid advancement of drone technology represents a pivotal moment across numerous sectors, including agriculture, logistics, surveillance, and emergency response. This transformative potential underscore the need for a comprehensive policy framework aimed at fostering sustainable growth within the drone industry. By creating an environment that encourages innovation and collaboration, stakeholders can harness the benefits of this technology while effectively addressing associated challenges. This framework aims to position Andhra Pradesh as a leader in the unmanned vehicle sector.

A thriving ecosystem is essential for nurturing research and development within the drone sector. Collaboration among government agencies, industry stakeholders, and educational institutions is crucial to establishing a vibrant landscape for innovation. By promoting partnerships, Andhra Pradesh can position itself as a leader in the global drone industry, ensuring that advancements are recognized and implemented to meet societal needs.

Entrepreneurship plays a vital role in driving technological progress, with startups often serving as the source of groundbreaking ideas. Supporting emerging enterprises is critical for stimulating local demand for drone services and products. Providing financial resources, mentorship, and essential support mechanisms empowers these startups to innovate and effectively respond to community needs, ensuring that the benefits of drone technology extend into local markets.

As the drone industry continues to expand, so does the demand for skilled professionals capable of operating and innovating within this space. Investing in training programs and educational initiatives is essential for cultivating a workforce that can meet the industry's evolving needs. Prioritizing skill development not only creates job opportunities but also prepares individuals to thrive in a rapidly changing technological landscape.

A clear and comprehensive regulatory framework is vital for the safe and responsible integration of drones into national airspace. Establishing guidelines that address safety, privacy, and security concerns fosters a balanced environment where innovation can flourish without compromising public trust. Collaboration between regulatory authorities and industry stakeholders is essential to create an atmosphere that supports responsible growth while safeguarding public interests.

Continuous innovation is paramount to maintaining competitiveness in the global drone market. Investments in research initiatives and partnerships between academia and industry are crucial for driving technological advancements. By focusing on research and development, Andhra Pradesh can position itself as a leader in the field, contributing to the global body of knowledge while addressing existing challenges and exploring new applications for drone technology.

Access to global markets is increasingly essential for growth in today’s interconnected world. Promoting local capabilities and establishing international partnerships can expand the reach of drone technology. Facilitating exports and creating opportunities in global markets not only enhances economic standing but also showcases the innovations emerging from the local ecosystem.

In conclusion, a multifaceted approach is required to fully realize the potential of drone technology. By fostering a supportive environment for innovation, promoting local entrepreneurship, building capacity, establishing robust regulatory frameworks, advancing research, and facilitating global market access, stakeholders can lay the groundwork for a sustainable future in the drone industry. This policy framework serves as a guide for meaningful collaboration among stakeholders, ultimately leading to enhanced economic growth, job creation, and technological advancement. As the complexities of this evolving field are navigated, a commitment to these principles will help shape a prosperous and innovative future for Andhra Pradesh as a leader in the unmanned vehicle sector.

1.1. Drone Landscape in India & Andhra Pradesh

The Indian drone market is poised for remarkable growth, projected to increase from USD 268 Mn in 2023 to USD 11.06 Bn by 2030, at a CAGR of over 70%. This expansion is driven by the diverse applications of drone technology across multiple sectors, including agriculture, healthcare, logistics, infrastructure, and defense.

Drones in Andhra Pradesh serve multiple purposes, enhancing efficiency across various sectors. They assist in crop monitoring and precision farming in agriculture, provide aerial assessments during disasters, and support infrastructure surveying. Additionally, drones facilitate last-mile delivery in remote areas, contribute to environmental monitoring, aid in law enforcement surveillance, and help with cultural preservation. Their diverse applications significantly improve accessibility and operational effectiveness throughout the state.

However, the drone ecosystem in Andhra Pradesh faces several critical gaps that must be addressed for optimal growth. There is a shortage of trained personnel, emphasizing the need for comprehensive training programs. The infrastructure for takeoff, landing, and charging is inadequate, and concerns over data privacy necessitate robust management protocols to build public trust. Furthermore, many potential users remain unaware of the benefits of drone technology, highlighting the need for awareness campaigns. Limited collaboration among government, industry, and academia also hinders innovation, while access to funding for startups remains insufficient. Addressing these gaps is essential for developing a sustainable drone ecosystem in the state.

In this dynamic environment, the Government of Andhra Pradesh is striving to establish itself as a leader in Drone System Design and Manufacturing (DSDM) and Drone Enabled Technology and Services (DeTS). By leveraging both central government initiatives and its own investor-friendly policies, Andhra Pradesh aims to create a conducive ecosystem for stakeholders in the drone industry. The formation of the Andhra Pradesh Drones Corporation Limited (APDC) as the nodal agency for all drone-related activities further underscores the state's commitment to fostering innovation and facilitating growth. This strategic approach not only enhances local capabilities but also attracts innovations and investments, positioning Andhra Pradesh as a potential hub for drone technology in India.

The Amaravati Drone Summit 2024 was a pivotal event for the drone industry, showcasing innovations and advancements in drone technology. Organized by the Government of Andhra Pradesh with support from Government of India, the summit brought together industry leaders, policymakers, and researchers to discuss the latest trends and applications of drones across various sectors. Attendees

experienced a dynamic environment filled with insights into the transformative impact of drones in agriculture, healthcare, logistics, and more.

The summit featured live demonstrations of cutting-edge drone technologies, allowing participants to witness firsthand the practical uses of drones. Expert panels conducted discussions on crucial topics, such as regulatory frameworks and technological advancements, shedding light on the future of drone manufacturing and services in India. A notable highlight was the hackathon, where teams competed to develop innovative solutions utilizing drone technology. This competitive platform encouraged creativity and collaboration, showcasing the potential of drones to solve real-world challenges.

Workshops and training sessions were also integral to the summit, aimed at enhancing skills in drone operations and technology. The event highlighted Andhra Pradesh's initiatives to create a favorable business environment for drone-related investments, reinforcing the state's commitment to becoming a leader in the drone sector. The Amaravati Drone Summit 2024 effectively catalyzed growth in the industry and positioned Andhra Pradesh as a key player on both national and global stages.

Key growth drivers for the drone market included rising adoption across sectors, supportive government policies, and technological advancements, as detailed below

Key Growth Drivers

a. Ease of Doing Business: The regulatory framework established by the Drone Rules 2021 and subsequent amendments aimed to simplify the approval process for drone operations while ensuring safety and compliance. These regulations have provided clarity on operational guidelines, licensing, and registration, thereby enhancing investor confidence. The government's proactive approach to updating regulations in response to technological advancements further strengthens this environment. Furthermore, the liberalization of the export policy has opened avenues for exporting civil drones with a payload of up to 25 kg to the global market.
b. Production Linked Incentive (PLI) Scheme: The Government of India has introduced the Product Linked Incentive (PLI) Scheme for drones and drone components, aiming to incentivize their manufacturing in the country to make them self-sustaining and globally competitive. The total financial outlay for the three years-FY 2022-23, FY 2023-24, and FY 2024-25-for the PLI scheme for drones and drone components is capped at INR 120 crore.
c. Technological Advancements: Technological advancements have produced autonomous drones capable of long-range operations day and night. Equipped with advanced sensors and AI, these drones perform complex tasks with minimal human intervention, enhancing efficiency in agriculture, surveillance, and logistics. Their development is poised to transform various applications, including emergency response and disaster management.
d. Investment Opportunities: The projected growth of the Indian drone market presents significant investment opportunities for startups and established companies alike. Venture capital and private equity are increasingly flowing into the sector, with a focus on developing innovative solutions and applications.
e. Diverse Applications: Drones are becoming indispensable tools in numerous industries. In agriculture, they facilitate precision farming, crop monitoring, and pest control. In healthcare, drones are used for delivering medical supplies to remote areas. Logistics companies leverage drones for efficient last-mile delivery, while infrastructure projects benefit from aerial surveys and inspections. The defense sector also continues to invest heavily in drone technologies for surveillance and reconnaissance.

1.2. Need for Drone Policy 4.0 2024-29

The emergence of drone technology presents significant opportunities and challenges for Andhra Pradesh, necessitating a well-defined policy framework tailored to the region's unique needs. As public service deliveries and industries within the state increasingly adopting unmanned aerial vehicles (UAVs) for applications such as agriculture, logistics, and disaster management, comprehensive guidelines are critical to foster innovation while ensuring safety, privacy, and regulatory compliance.

To facilitate the growth of the drone industry, it is essential for the government to take proactive measures that include handholding businesses and entrepreneurs entering this space. By providing training, resources, and access to technology, local stakeholders can be empowered to innovate effectively. Establishing robust feedback mechanisms will further enhance the policy framework, allowing for continuous adjustments based on real-world experiences and challenges faced by operators.

A comprehensive policy framework will not only stimulate investment and attract businesses interested in leveraging drone technology but also contribute to economic growth and job creation. Additionally, such a framework will help build trust among local stakeholders, including residents, businesses, and government entities. Clear regulations regarding privacy and data security will be essential to alleviate concerns about surveillance and misuse of information. By addressing these issues transparently and incorporating community feedback, the government can foster a collaborative environment where innovation flourishes. Ultimately, a strategic approach to policy development will position Andhra Pradesh as a leader in drone technology, driving sustainable development while meeting the region's specific needs.

2. Policy Period & Applicability

a. This policy is valid for five years from the date of its notification unless extended by the government.
b. The policy may be amended, modified, or replaced in its entirety. All amendments and modifications shall be applied prospectively and shall not curtail any benefit or concession already granted under the policy.
c. This policy shall apply to all organizations registered/headquartered in Andhra Pradesh.

3. Policy Framework

3.1. Vision

To create a transformative ecosystem in Andhra Pradesh for the development, integration, and responsible use of unmanned and autonomous systems, enhancing innovation, efficiency, and sustainability across agriculture, industry, public safety, and infrastructure. This vision aims to enable Andhra Pradesh to become a leading global destination for unmanned technology, supporting vibrant economic growth and setting new benchmarks for responsible and sustainable deeptech driven progress.

3.2. Mission

To foster a comprehensive and sustainable drone ecosystem in Andhra Pradesh by streamlining policies, enhancing skill development, and integrating drones into key economic sectors of the state. Through these efforts, we aim to drive economic growth, create job opportunities, and attract investments, positioning Andhra Pradesh as a leader in innovation and a catalyst for a prosperous future.

3.3. Guiding Principles

Formalization of the Sector

Streamline registration and certification processes for new and existing drone businesses with support from the Competent Authority

Capacity Building

Establish comprehensive training programs and workshops to enhance drone operation skills and workforce readiness

Employment Generation

Create job opportunities in the burgeoning drone industry, leveraging the state's demographic dividend

Competitiveness

Introduce subsidies and cooperative procurement strategies to reduce costs and enhance the competitiveness of drone services

Knowledge Economy

Develop a centralized data repository for drone information to foster innovation and improve accessibility

Promotion and Adoption

Implement targeted strategies to raise awareness and encourage the widespread adoption of drone technology across various sectors

Regulatory Mechanism

Ensure adherence to national regulations by implementing clear guidelines and compliance mechanisms for operators

Public Awareness

Conduct outreach programs to educate communities about the benefits of drones, relevant regulations, and responsible usage

Environmental Sustainability

Implement guidelines that minimize environmental impact, promoting responsible drone operations to protect local ecosystems

Innovation Ecosystem

Encourage collaboration among academia, industry, and government to drive innovation and develop new drone applications

Integration with Emerging Technologies

Facilitate the seamless integration of drones with IT, IoT, ML, and AI to enhance operational efficiency

Testing and Validation

Develop dedicated facilities and programs for rigorous testing and validation of drone technologies to ensure safety, reliability, and performance

3.4. Policy Targets

The policy intends to achieve the following targets during its operative period:

1. ***Boost Manufacturing, Research, and Employment***
    a) Establish minimum 100 drone companies within the state.
    b) Establish more than 20 remote pilot training organizations and 50 drone skilling centers (Centers of Excellence).
    c) Provide Drone Remote Pilot training for 25,000 individuals in unmanned vehicle operations
    d) Create 15,000 direct employment opportunities within the state's drone ecosystem and additional 25,000 indirect employment such as repairing & maintenance, Co-Pilot and other Logistical activities.
2. ***Foster Innovation, Support Startups, and Attract Investments***
    a) Establish a state-of-the-art drone innovation and flight testing center.
    b) Create sandbox for all stakeholders to access data and develop POCs for use cases.
    c) Attract Rs. 1,000+ Cr in investments from domestic and international sources.
    d) Generate Rs.3,000 Cr revenue from drones and its associated ecosystem services
    e) Facilitate drone exports valued at Rs. 1,000+ Cr.
    f) Develop 50 Centres of Excellence in Engineering Colleges, ITIs and Polytechnic Institutions through Public-Private Partnership (PPP) model.
3. ***Increase Adoption of Drone Technology***
    a) Successfully develop and implement new & innovative drone applications across 100+ use cases, enhancing efficiency in public service delivery across sectors.
    b) Integrate drone operations with real-time governance systems for enhanced efficiency and decision-making
    c) Popularise Government Schemes such as Drone Didi Scheme, etc.,

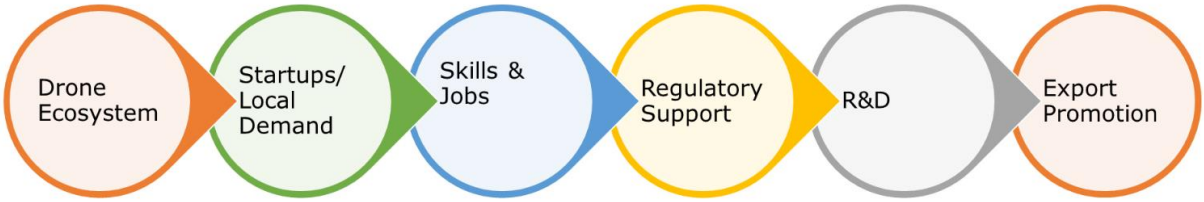
3.5. Nodal Agency

The Andhra Pradesh Drones Corporation (APDC) will serve as the nodal agency for implementing the Drone Policy 4.0 2024-29. The APDC will coordinate with the State Investment Promotion Committee (SIPC) and the State Investment Promotion Board (SIPB) to secure approval for investments in the state's drone ecosystem, within the extant policy framework of the State covering Industrial Development Policy, MSME & Entrepreneur Development Policy, Startup Policy, etc., This process involves evaluating projects to ensure they align with state policies, thereby fostering growth and innovation in the drone industry.

As a key facilitator, the corporation is committed to supporting entrepreneurs in the drone sector by providing extensive guidance on accessing various incentives and benefits available through programs from both the Government of India and the Government of Andhra Pradesh. This initiative aims to streamline operations and promote growth within the industry, ensuring that entrepreneurs can effectively leverage the available resources and support.

4. The Policy Pillars

The Government of Andhra Pradesh aims to foster the growth of the drone sector in the state by implementing structured policy support across the following six pillars:



4.1. Pillar-1: Fostering the Drone Ecosystem

The Government of Andhra Pradesh is dedicated to advancing the drone sector by facilitating a robust ecosystem that fosters innovation and growth. Through strategic collaborations with regulatory authorities and industry stakeholders, the government aims to create a supportive environment at appropriate place for research, development, and commercialization of drone technologies. This initiative will focus on building essential infrastructure, providing resources, and promoting collaboration to drive the sector forward. The following sections outline the key areas where the government will facilitate progress.

a. *Development of a Comprehensive Drone Ecosystem:* The government will facilitate the establishment of a comprehensive drone ecosystem that includes vital components such as research and development facilities, manufacturing and assembly units, dedicated testing corridors, and certification centers. These elements are crucial for promoting innovation and ensuring that drone technologies meet industry standards. By providing dedicated testing corridors and airstrips, the government will enable safe and efficient testing of new drone models, while certification centers will streamline the approval process, ensuring compliance with national regulations and enhancing operational safety. In consultation and support from the Government of India, the government will seek to establish a Drone Traffic Control (DTC) system across all districts with centralized Master Control Tower for safe airspace management.
b. *Common User Facilities and Amenities:* To bolster industry growth, the government will facilitate the development of dedicated common user facilities designed to enhance collaboration and operational efficiency in the Drone City to be developed at Orvakal in Kurnool district. State-of-the-art plug-and-play office spaces will be provided for startups and established businesses, allowing them to quickly set up and begin operations. Additionally, the facility will include training centers focused on developing workforce skills in drone operations, including specialized remote pilot training programs. These initiatives will ensure that operators are well-equipped to meet the demands of a rapidly evolving industry.
c. *Hub-and-Spoke Model for Enhanced Connectivity:* The government will facilitate the implementation of a hub-and-spoke model to optimize connectivity among stakeholders in the drone sector. This model will enhance logistics and operational coordination, linking manufacturers, service providers, and end-users. The inclusion of warehousing facilities will streamline supply chain processes, enabling effective storage and distribution of drone components and products. By fostering this interconnected environment, the Government of Andhra Pradesh aims to create a vibrant drone industry that drives economic growth and technological advancement throughout the state.

d. *Strategic Collaborations:* The government aims to foster innovation and growth through strategic collaborations with regulatory authorities and industry stakeholders. By creating a supportive environment for research, development, and commercialization of drone technologies, the initiative will focus on building essential infrastructure and promoting collaboration within the sector.

4.2. Pillar-2: Empowering Startups and Addressing Local Demand

a. Driving Innovation in Drone Solutions

The State recognizes the need to validate drone technologies and their applications through systematic Proof of Concept (PoC) projects within government departments. These initiatives shall serve as controlled environments for testing, evaluation, and demonstration of drone-based solutions before broader implementation.

The effective use of drones across various sectors hinges on a clear understanding of their practical applications. The Identification and Dissemination of Use Cases is a crucial element of Andhra Pradesh's Drone Policy, aimed at showcasing the capabilities of drones and encouraging their adoption in multiple industries. Government funding is anticipated to play a significant role in supporting research, documentation, and outreach efforts.

This comprehensive approach is poised to significantly enhance the integration of drone technology across key sectors in Andhra Pradesh. By focusing on practical applications, the policy fosters innovation and efficiency while also aiming to build public acceptance.

Andhra Pradesh Drones Corporation (APDC) will form a committee of experts from IITs, Drone Manufacturers, Quality Council of India (QCI) and Users to evaluate, validate, standardise and certify the new use cases.

A dedicated portal will be developed to centralize all drone-related activities, facilitating streamlined operations and collaboration across stakeholders.

- *Features of the dedicated drone portal:*
    - Single Window System for POC: A user-friendly interface for enterprises to submit applications for proof of concept (POC) information, collaboration, and state-level permissions, if needed, managed at the district level by the Collector or designated authorities.
    - Coordination for POC Implementation: Once approvals are granted, the portal will facilitate coordination among all stakeholders involved in executing the POC on the ground, ensuring effective collaboration and communication. POCs shall be implemented with clear objectives, timelines and evaluation metrics.
    - POC Reporting and Evaluation: POC reports will be uploaded to the portal after implementation. The Andhra Pradesh Drones Corporation (APDC) will evaluate these reports to determine eligibility for incentive awards, promoting transparency and accountability.
    - Sandbox Access: The portal will feature a sandbox environment available to all registered users, providing access to government data, including drone-related datasets. This resource will enable startups to innovate and develop future-ready solutions.

- Collaboration with Ratan Tata Innovation Hubs: Successful use cases identified through the POC process will be referred to the Ratan Tata Innovation Hubs in Andhra Pradesh for further incubation. This partnership will provide additional support, mentorship, and resources to enhance the viability and scalability of these innovations.

This dedicated portal will serve as a comprehensive platform for managing drone initiatives in Andhra Pradesh, fostering innovation and collaboration. By integrating a single-window permission system, POC evaluation, and access to incubation resources, the portal aims to accelerate the adoption of drone technology and its applications across various sectors, ultimately driving economic growth and improving public services in the state.

b. *Public Service Delivery as a Key Consumer:*

The Government of Andhra Pradesh is poised to transform public service delivery through the strategic deployment of drone-based services across various sectors. This initiative aims to enhance operational efficiency, reduce response times, and elevate the quality of services offered to citizens. Key Elements of the Initiative

1. Integration of Drone Services: The government will incorporate drone technology into essential public services such as healthcare, agriculture, logistics, and disaster management. This integration is designed to streamline operations and create new pathways for service delivery.
2. Driving Demand for Drone Solutions: By implementing these services, the government seeks to stimulate significant demand for drone-enabled solutions, encouraging industry innovation and the continuous enhancement of offerings.
3. Empanelment of Service Providers: The Andhra Pradesh Drones Corporation will curate a list of qualified service providers. These vendors will undergo a thorough vetting process to ensure they can deliver high-quality, tailored drone solutions to various government departments, fostering a competitive environment that enhances service quality.
4. Prioritize Local Procurement: The government will prioritize procurement from state drone manufacturers/service providers for government projects, helping to drive demand for locally produced drones/service providers and create a sustainable market for indigenously produced products.
5. Drone data: The government will endeavor to utilize drone-generated data to feed into existing digital governance platforms, enabling data-driven decision-making in areas like urban planning, resource management, and infrastructure development.
6. Access to a Centralized Portal: Each government department listed in Annexure-A shall designate a Drone Innovation Officer. The Government departments will be granted access to a dedicated single-window portal designed to facilitate the deployment of drone services. This portal will feature:
    6.1. A comprehensive database of empaneled vendors, allowing departments to easily identify and engage suitable service providers.
    6.2. Detailed information about the range of drone solutions available, customized to meet specific departmental needs.
    6.3. Management tools to monitor and oversee drone operations efficiently.

7. Departments shall share learnings and best practices from their PoC projects. Success stories and lessons learned shall be documented for future reference.
8. Streamlined Engagement Process: The portal will simplify the process of connecting with drone service providers, enabling government departments to seamlessly integrate drone

technology into their workflows. By centralizing vendor information and service offerings, departments can efficiently select and implement optimal solutions.

4.3. Pillar-3: Capacity Building and Employment Generation

The rapid advancement of unmanned vehicle technologies offers a remarkable opportunity for economic growth and workforce enhancement in Andhra Pradesh. The Capacity Building and Employment Generation pillar of the Drone Policy is dedicated to equipping the local workforce with essential skills for success in the unmanned vehicle sector while fostering job creation. By implementing targeted training programs and forming strategic partnerships, the government aims to build a robust pipeline of industry-ready professionals who can drive drone technology and innovation forward.

- Centers of Excellence: The government plans to establish 50 Centers of Excellence in Engineering Colleges, ITIs and Polytechnic Institutions through Public-Private Partnership (PPP) model. This initiative will significantly enhance the quality of vocational training available in the region. All Engineering Colleges, ITIs and Polytechnic Institutions will be encouraged to develop use cases and submit for approval. State government will facilitate setting up of Center of Excellence in institutions developing successful PoCs.
- State will also facilitate certification of new courses required for creating sufficient skilled manpower in drone sector.
- Comprehensive Workforce Training: A comprehensive remote pilot training program will be launched to equip 25,000 individuals with the skills needed for unmanned vehicle operations, ensuring a highly skilled workforce that meets the demands of the industry.
- Job Creation: The Government will proactively engage with industry leaders to organize workshops and roadshows focused on job placement programs and internships, thereby improving the employability of trained individuals. This initiative aims to generate 15,000 new direct jobs within the state's drone ecosystem and additional 25,000 indirect employment in ancillary activities, thereby contributing to economic growth and community development.
- Training and Capacity Building:
    1. Skill Development Programs: Significant investments will be made in training initiatives designed to equip personnel with the skills necessary for effective drone operation and management. This includes hands-on training and ongoing education to stay current with technological advancements.
    2. Knowledge Sharing: A centralized repository will be created to house best practices, operational guidelines, and case studies, facilitating continuous learning and improvement among government employees.
    3. Support for Entrepreneurship: Resources, mentorship, and funding opportunities will be provided to nurture emerging startups within the unmanned vehicle sector, fostering innovation and growth.
- Drone training and skilling programs*:* The APDC will collaborate with the Andhra Pradesh State Skill Development Corporation (APSSDC) to initiate scalable vocational training programs focused on drone technology to meet the industry’s requirements.

Through a focus on capacity building and job creation, Andhra Pradesh seeks to harness the transformative potential of unmanned vehicle technologies. This initiative aims to strengthen the local workforce's skills, drive innovation, and promote economic development by creating jobs and supporting entrepreneurial ventures in the state.

4.4. Pillar-4: Regulatory Framework and Supportive Environment

A robust Regulatory Framework & Enabling Environment is crucial for the safe and effective integration of unmanned vehicles into various sectors in Andhra Pradesh. This pillar of the Drone Policy aims to facilitate implementation of existing guidelines and regulations that promote innovation while ensuring public safety and compliance. By promoting a supportive regulatory environment, the government can foster industry growth and encourage responsible use of drone technologies.

a. *Support for Permissions and Certification:* Startups will also be guided through obtaining necessary permissions, testing, and certification for their drone operations. This initiative is designed to streamline access to essential regulatory approvals and ensure businesses can operate efficiently within the established legal framework.
b. *Exclusive Chief Minister Udyami Helpline:* In addition to the dedicated portal, an exclusive Chief Minister Udyami Helpline will be launched to offer easy access to information and immediate assistance. This helpline will specifically guide entrepreneurs regarding the dedicated portal for the drone sector and connect them to the state's institutional support network.
c. *Create awareness among Law Enforcement Agencies about the use case applications of drones: The* government will develop comprehensive SoPs and conduct in-depth training programs designed for the users. The training will focus on managing crises, including responding to unidentified UAV operations or accidents. These trainings will emphasize distinguishing between authorized and unauthorized drone activities in the state, ensuring that authorities are well-equipped to handle routine operations and emergencies effectively.
d. *Coordinate with Ministry of Civil Aviation (MoCA) and other regulatory authorities in preparing guidelines for advanced use of Unmanned and Autonomous systems including establishing Drone Traffic Control (DTC) facilities.*
e. *Community Engagement and Transparency*
    - *Public Awareness Campaigns:* The government will conduct outreach programs in Telugu, English, and Hindi to inform citizens about the benefits of drone technology in public services, promoting transparency and community support.
    - *Feedback Mechanisms:* Create avenues for public feedback on drone initiatives, ensuring that services align with community needs and expectations.

4.5. Pillar-5: Advancing Research and Development

The establishment of Research and Development (R&D) Centers is a key component of the Drone Policy in Andhra Pradesh, aimed at fostering innovation in unmanned vehicle technologies. These centers will promote collaboration between academic institutions and industry stakeholders, creating a vibrant ecosystem for research and development. By leveraging the expertise of both academia and the private sector, these centers will drive advancements critical for the evolution of drone technologies.

The R&D efforts will primarily focus on several cutting-edge areas. Anti-Drone Technology will be significant in addressing security concerns related to unauthorized drone use, developing effective countermeasures to safeguard airspace. Additionally, the centers will explore Urban Air Mobility (UAM) and Advanced Air Mobility (AAM), which are pivotal for integrating drones into urban environments and enhancing transportation efficiency. Research will also extend to emerging technologies, such as artificial intelligence, machine learning, and advanced sensor technologies,

which can significantly enhance drone capabilities, including autonomous navigation and real-time data processing.

Another critical focus area will be on eVTOL (electric Vertical Take-Off and Landing) and Beyond Visual Line of Sight (BVLOS) operations, essential for expanding the operational capabilities of drones. R&D in this area will facilitate the development of technologies and regulatory frameworks that support long-distance drone operations. By concentrating on these key areas, including emerging technologies, the R&D Centers will play a vital role in advancing drone technology, driving innovation, and ensuring that Andhra Pradesh remains at the forefront of the unmanned vehicle sector.

Single Window System in Dedicated Portal: The government will ensure single window clearances for drone research and development, manufacturing, and related services. This initiative aims to streamline the regulatory process, allowing businesses and research institutions to efficiently navigate the necessary approvals and permits. By consolidating various regulatory requirements into a centralized platform, the government seeks to foster innovation in the drone sector, attract investment, and promote technological advancement. This approach will enhance transparency and reduce administrative hurdles, ultimately supporting the growth of a vibrant drone ecosystem that contributes to economic development and enhances capabilities in various industries.

Andhra Pradesh Drone Corporation will forge MOUs with leading academic institutions to foster collaboration, promote knowledge sharing, and drive the development of innovative products within the startup ecosystem.

4.6. Pillar-6: Facilitating Global Market Access for Local Drone Manufacturers

Facilitating global market access and export opportunities for local drone manufacturers is a key objective of the Drone Policy in Andhra Pradesh. This initiative aims to empower manufacturers by leveraging the various schemes and policies offered by both the Government of India and the Government of Andhra Pradesh, with a target of achieving a 20% annual growth rate in drone exports. Key Components:

1. Leveraging Government Schemes: The policy will capitalize on existing government schemes designed to support exporters, including:
    - Financial Incentives: Grants and subsidies to assist with export costs.
    - Training Programs: Initiatives aimed at enhancing the export capabilities of local manufacturers.

2. Dedicated Portal: A dedicated online portal will serve as a comprehensive resource hub for local drone manufacturers, featuring:
    - Market Statistics: Up-to-date information on global market trends, demand forecasts, and competitive analysis to help manufacturers identify opportunities.
    - Available Schemes: Detailed descriptions of government grants and incentives for exporters, ensuring easy access to support.
    - Guidance Resources: Step-by-step guides on export processes, compliance with international regulations, and best practices for entering global markets.

3. Handholding Support: The portal will offer personalized assistance to local manufacturers as they navigate international trade complexities, including:
    - Consultations: One-on-one sessions with industry experts.
    - Workshops and Summits: Regular workshops and industry summits focused on export readiness, innovation sharing, and networking opportunities with industry leaders and potential buyers.

4. Promotion of Local Capabilities: The initiative will actively promote the capabilities and innovations of local drone manufacturers on global platforms, enhancing their visibility and reputation in the international market.

By creating a robust support system that includes a dedicated portal and leveraging government resources, Andhra Pradesh aims to empower local drone manufacturers. This comprehensive approach will facilitate their entry into global markets, drive a 20% annual growth rate in exports, and foster a thriving export ecosystem, ultimately positioning the state as a leader in unmanned vehicle technology.

5. Incentives

The Government of Andhra Pradesh shall allocate Rs. 500 crores to support the implementation of this drone policy throughout the policy period. This financial commitment aims to foster technological advancement and innovation within the state. The funding will enhance infrastructure, facilitate research and development, and provide training for personnel, thereby promoting the effective use of drones across various public services

The proposed Drone City in Orvakal, Kurnool district will act as a drone ecosystem hub with common user facilities for Research & development, Manufacturing and Testing of drone technology. The common facility will be developed and run by a committee of experts drawn from the industry, academia, service providers and user departments.

5.1. Financial Incentives

a. 20% of fixed capital investment for new manufacturing and assembly units, remote pilot training organizations, research & development centers will be covered up to a maximum of Rs. 5 crores.
b. 100% net SGST payable on the sale of final products manufactured, sold and registered in the State will be reimbursed for a period of 3 years from the date of commercial production.
c. The government may consider notifying top-up incentives in addition to GOI incentives, such as the Product Linked Incentive (PLI) Scheme for drones and drone components.
d. Eligible individual, startups and businesses demonstrating proof of concept will receive up to 100% of actual expenditure incurred or up to a maximum of Rs.5 lakhs, whichever is less, on reimbursement basis after adoption and implementation of the solution by respective Government department within the State of Andhra Pradesh.
e. Top up on Modified Special Incentive Package Scheme for Electronics System Design and Manufacturing Sector of Government of India
    - State Government will give 10% of the total incentive amount sanctioned for the project under the GoI Scheme.
    - This incentive is applicable to R&D projects on Drone Technology taken up in Andhra Pradesh only.
    - This is a Milestone-Based Incentive for Research and Development on Drone Technology, payable in three equal installments- first, upon approval of the project by the GoI, second on submission of final project report in dedicated portal and finally, on completion of the Proof of Concept.
f. 100% cost reimbursement will be made available for testing and certification expenses up to Rs. 5 lakhs, or the actual cost incurred, whichever is lower.
g. Cost Reimbursement for Intellectual Property Filing: To further encourage innovation, the government will offer 100% of the actual cost or Rs. 3 Lakhs for national and Rs. 6 lakhs for international application, whichever is less, reimbursement for trademark, patent, and IP filing. This funding aims to reduce financial barriers for startups seeking to protect their intellectual property and foster a culture of innovation.
h. Fixed power cost reimbursement at Rs. 1 per unit for 2 years from the date of commencement of commercial production, capped at Rs.1 lakhs per annum.
i. Incentives for approved Skill Training and Centers of Excellence
    - Support for Center of Excellence: Up to 50% funding for setting up Centers of Excellence in Engineering Colleges, ITIs and Polytechnic Institutions in Andhra Pradesh with a maximum cap of Rs.20 lakhs per training center, aimed at enhancing training facilities for unmanned vehicle technologies.
    - Innovative Alliances and Curriculum Development: Fostering partnerships between Engineering Colleges, ITIs and Polytechnic Institutions in Andhra Pradesh and the local drone industry to enhance curriculum relevance, supported by joint program funding of up to Rs. 20 lakhs.
    - Research Grants for Educational Institutions: Research grants of up to Rs. 20 lakhs will be awarded to technical institutes and educational institutions to promote innovation in drone technologies. These grants will facilitate the development of drone components, platforms, and innovative use cases, encouraging collaboration between academia and industry.

- Training Incentives: One-time Rs. 2,000 incentives for each certified remote pilot and technician, payable to Training Organizations. This incentive is in addition to benefits from the National Skill Development Corporation and any other initiatives of the Government of India and Government of Andhra Pradesh, including Pradhan Mantri Kaushal Vikas Yojana.
- Stipend Grant: Provide a grant of Rs. 5,000 per trainee for organizations that successfully train individuals in unmanned vehicle operations for a maximum of 10 persons per organization.

j. 50% cost reimbursement up to Rs. 1.5 lakhs for participation in national exhibitions.
k. 100% cost reimbursement up to Rs. 3 lakhs for participation in international exhibitions.

5.2. Other Incentives

a. Up to 100% exemption of Conversion Charges applicable in case of conversion of Agricultural land to Non-Agricultural land
b. Up to 100% exemption of charges for Change of Land Use in the Master Plan notified, wherever applicable.
c. Up to 100% exemption for Layout Approval
d. Up to 100% exemption of Stamp Duty and Registration Charges for pooling the lands
e. Land Lease: Offer a 50% reduction on land lease rates for the first three years for businesses establishing operations.
f. Local Procurement: The government will prioritize local procurement of drones and drone-related services, targeting a minimum of 50% of all acquisitions to support domestic industries and foster economic growth. By encouraging the acquisition of locally produced drones and associated services, this initiative aims to strengthen the supply chain, create jobs, and enhance technological capabilities within the region.

This policy framework outlines a strategic approach to developing a vibrant ecosystem for unmanned vehicles in Andhra Pradesh. By leveraging fiscal incentives, capacity-building initiatives, and robust government support, the state aims to establish itself as a global leader in unmanned vehicle technologies, thereby driving innovation, economic growth, and technological advancement in the region.

6. Operational Guidelines

The operating guidelines for this policy will be issued separately detailing the procedures for availing incentives under this policy.

7. Annexure I – Proof of Concept Areas

A detailed list of government departments where proof of concept projects can be effectively conducted is enclosed as an annexure. By engaging in proof-of-concept activities, these departments can explore innovative solutions, assess their feasibility, and evaluate their potential impact on public services. This initiative aims to foster collaboration between governmental bodies and external partners, paving the way for advancements that can enhance operational efficiency and improve service delivery to the public.

Sr .No.	Department Name
1	Agriculture and Marketing
2	Animal Husbandry, Dairy Development and Fisheries
3	Backward Classes Welfare
4	Environment, Forest, Science and Technology
5	Human Resources (Higher Education)
6	Energy
7	Human Resources (School Education)
8	Department of Economically Weaker Sections Welfare
9	Consumer Affairs, Food and Civil Supplies
10	Finance
11	Chief Electoral Officer
12	Gram Volunteers/Ward Volunteers and Village Secretariats /Ward Secretariats
13	Health, Medical & Family Welfare
14	Home
15	Housing
16	Water Resources
17	Industries and Commerce
18	Infrastructure and Investment

19	Information Technology, Electronics and Communications
20	Labour, Factories, Boilers & Insurance Medical Services
21	Law
22	Legislature
23	Municipal Administration and Urban Development
24	Minorities Welfare
25	Public Enterprises
26	Planning
27	Panchayat Raj and Rural Development
28	Disaster Management
29	Revenue
30	Real Time Governance
31	Department of Skills Development and Training
32	Social Welfare
33	Department of Tribal Welfare
34	Transport, Roads and Buildings
35	Women, Children, Disabled and Senior Citizens
36	Youth Advancement, Tourism and Culture

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